



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address COMMISSIONER FOR PATENTS
P.O. Box 1150
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 865,720	05 29 2001	Olivier Vendier	Q64636	5944

7590

06 18 2003

SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W., Suite 800
Washington, DC 20037-3213

EXAMINER

KIANNI, KAVEH C

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 06 18 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/865,720

Applicant(s)

VENDIER ET AL.

Examiner

Kevin C Kianni

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 9-12 and 14-22 is/are allowed.
- 6) ☐ Claim(s) 1-8 and 13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 29 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in the National Stage application from the International Bureau (PCT Rule 13.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

DETAILED ACTION

Claim Objections

1. Claim 2 1 is objected to because of the following informalities: The claims should be devoid of the phrase “, for example,”, that is inconsistent with proper/allowed claim limitations. Appropriate correction is required.

Allowable Subject Matter

2. Claims 9-12 and 14-22 are allowed because of the following reason. Claims 9-12 and 14-22 are allowed since the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the heat removal system comprise a first segment and a second segment, the first segment connecting an integrated circuit of the first module to a first face of the first module, the first face being distinct from a second face making contact between the first module and the soleplate, and the second segment connecting said second face to the soleplate, in combination with the rest of the limitations of the base claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hesselbom (US 6014313).

Regarding claims 1-4 and 13, Hesselbom teaches an electronic assembly (shown at least in fig. 1-2) comprising at least a first integrated electronic module 3, the first module including at least one interconnection means for optical connection to a printed circuit card or to a second electronic module(see fig. 2, items electronic chips/modules interconnections and col. 11, lines 20-35), the assembly including a heatsink-plate 19 and heat removal means for removing heat from said module via a first face of said module to the heatsink-plate (see at least fig. 2 or 1, item heat-sink 19 and 35; also col. 10, lines 35-59; wherein the heat removal/exchange between the electrical modules and coolant 19 takes place through liquid channels/pipes, see col. 11, lines 6-19; which is consistent with applicant's heat removing means/pipeline described at least in page 6, lines 30-32 of specification), and wherein the heatsink-plate is independent of the interconnection means of the first module (see col. 10, lines 43-59); and wherein the first face of said module is distinct from the second face of said module that contact said heat-sink (see at least fig. 2 or 1, items first vs. second face of the module 3 being distinct for contracting the heat-sink, while the bottom surface is used for electrical connections, see col. 8, lines 33-43). Hesselbom further teaches wherein the interconnection means includes an optical fiber (col. 11, lines 31-35); wherein the optical fiber is included in a printed circuit card, and wherein a first end of the fiber is mounted in register with an optical contact of the first module by means of

Art Unit: 2877

balls bonded to the module and disposed with precision relative to metal areas of the printed circuit card (see fig. 2-3, items connecting balls, see col. 7, lines 30-35).

However, Hesselbom does not specifically teach wherein the above heatsink-plate is a soleplate, the interconnection means includes a flexible printed circuit, and the end of the optical fiber preferably includes an etched lens. It is obvious to a person of ordinary skill in the art when the invention was made to modify Hesselbom's optoelectronic elements with well known analogously functional elements (such as references such as GB 2322203, provided by applicant, and US 4729296, US 4836637 and US 5428190 provided herein as prior art) in order to assemble n entire plane of the 3-dimensional multichip module easily and since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. and since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Regarding claim 5, Hesselbom further teaches the interconnection means includes a printed circuit card portion connected to the first module and a second printed circuit card portion connected to the second module, the two cards being interconnected by a second interconnection means (see col. 11, lines 20-34)

Art Unit: 2877

Regarding claim 6, Hesselbom further teaches wherein the two cards are secured to each other and the second interconnection means is constituted by tracks interconnecting the two card portions (shown in at least fig. 4).

Regarding claim 7, the arguments presented in rejection of claim 4 is analogous in rejection of claim 7.

Regarding claim 8, Hesselbom further teaches wherein the interconnection means comprise a contact matrix, the contact matrix being mounted, for example, between the module and the printed circuit card (shown in at least fig. 4, items matrix interconnections).

Response to Amendment

5. Applicant's arguments filed on March 27, 2003 have been fully considered, however, they are not found persuasive.

This examiner has carefully examined claims 1-22 in view of applicant's amendment/arguments.

Applicant alleges (page 8, 1st parag-page 4, 1st parag.) that Hesselbom does not teach heat removal means for removing heat from said module via a first face of said module to the heatsink-plate. The examiner responds that Hesselbom indeed teaches heat removal means (heat-removal channels) for removing heat from said module via a first face of said module to the heatsink-plate 3 (see col. also col. 10, lines 35-59;

Art Unit: 2877

wherein the heat removal/exchange between the electrical modules and coolant 19 takes place through liquid channels/pipes, see col. 11, lines 6-19; which is consistent with applicant's heat removing means/pipeline described at least in page 6, lines 30-32 of specification).

■ Examiner kindly advises that in order to make claim 1 allowable the applicant needs to make a clear distinction between the inventive heat removal system features, depicted in figures such as 1 and 5, verses the prior art.

THIS ACTION IS MADE FINAL

6. This action in response to applicant's amendment/arguments made FINAL and applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2877

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaveh Cyrus Kianni whose telephone number is (703) 308-1216.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (703) 308-4881.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-7722, (for formal communications intended for entry)

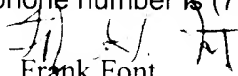
or:

(703) 308-7721, (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South
Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.

Kevin Cyrus Kianni
Patent Examiner
Group Art Unit 2877


Frank Font
Supervisory Patent Examiner
Group Art Unit 2877

June 5, 2003